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| EXAMINER | | | | |
| AJIBADE AKONAI OLUMIDE | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/597,405

Applicant(s)

HABETHA, JOERG

Examiner

OLUMIDE T. AJIBADE AKONAI

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 52-54, 56-58 and 60 is/are rejected.
- 7) ☒ Claim(s) 4-51, 55, 59 and 61 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 23-26 of the remarks, filed November 25 2009, with respect to the rejection(s) of claim(s) 1-3, 52-54 and 56-58 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Salokannel et al 7,496,081.

Allowable Subject Matter

2. The indicated allowability of claim 60 is withdrawn in view of the newly discovered reference(s) to Salokannel et al 7,496,081. Rejections based on the newly cited reference(s) follow.

Claim Objections

3. Claims 60 and 61 are objected to because of the following informalities:

Regarding claim 60; on line 25, delete the "a" and replace with "b.", and on line 29, delete "b." and replace with "c.".

Regarding claim 61, on line 5, insert "the wireless device" before "further comprising".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 52-54, 56-58 and 60 are rejected under 35 U.S.C. 102(e) as being anticipated by **Salokannel et al 7,496,081 (hereinafter Salokannel)**.

Regarding **claim 1**, Salokannel discloses a method of decentralized medium access control in a communications network including at least one wireless device, comprising dividing time into a sequence of at least one superframe comprising at least one dynamic beacon period and at least one data transmission (superframe comprising beacon slots that are dynamic because the beacon period is dynamic, see figs. 2 A, 7 and 8, col. 5, lines 45-50, col. 12, lines 3-34), said dynamic beacon period having a predetermined maximum length and including a variable plurality of beacon slots (superframe with variable number of beacon slots, and wherein the maximum number of beacon slots is 24, see figs. 2A, 7 and 8, col. 3 line 66-col. 4, line 6, col. 7, lines 34-50); beaconing by transmission of a beacon frame in a unique one of said plurality of beacon slots by every device in an awake state (DEV 102 in a WPAN 100 transmitting a beacon message to devices in the network, see col. 6, lines 51-59, col. 7, lines 13-30), said beacon frame including information (beacon message includes a beacon period BP length, see col. 6, lines 38-46, col. 7, lines 13-22 and 34-37); and grouping said plurality of beacon slots into at least one contiguous dynamic beacon period (contiguous dynamic beacon slots, see figs. 7 and 8, col. 4-6, col. 12, lines 3-34).

Regarding **claim 2** as applied to claim 1, Salokannel further discloses the step of said dynamic beacon period 301 dynamically expanding or shrinking in length by a multiple $N \geq 1$ of beacon slots within said predetermined maximum size in accordance with the number of occupied beacon slots (superframe with variable number of beacon slots because of the dynamic increase/decrease of the beacon period, and wherein the maximum number of beacon slots is 24, see figs. 2A, 7 and 8, col. 3 line 66-col. 4, line 6, col. 7, lines 34-61).

Regarding **claim 3** as applied to claim 2, Salokannel further discloses the steps of: receiving by each beaconing device beacons transmitted by other devices within a radio range of the beaconing device (see col. 6, lines 38-46); and each beaconing device autonomously determining the length of said at least one contiguous dynamic beacon period in which it is beaconing based on the received beacons from other devices and information included in said received beacons (dynamic beacon period based on information included in the beacon message transmitted from other devices, see col. 6, lines 38-46, col. 7, lines 34-61).

Regarding **claims 52** as applied to claim 1, Salokannel further discloses the device announcing in its beacon the length of the dynamic beacon period based on beacons received from other devices and information included in said received beacons (DEV 102 transmitting a beacon message that contains the beacon period length, the beacon period length being based on the beacon messages received from other devices, see col. 5, lines 10-31, col. 7, lines 12-61).

Regarding **claims 53 and 54** as applied to claims 2 and 3, Salokannel further discloses the device announcing in its beacon the length of the dynamic beacon period based on beacons received from other devices and information included in said received beacons (DEV 102 transmitting a beacon message that contains the beacon period length, the beacon period length being based on the beacon messages received from other devices, see col. 5, lines 10-31, col. 7, lines 12-61).

Regarding **claims 56, 57 and 58**, Salokannel further discloses, a communications network (WPAN 100, see fig. 1, col. 3, lines 41-45) comprising a plurality of devices (DEV 102, see fig. 1, col. 3, lines 41-45) that include dynamic beacon periods for transmission of their beacon frames by performing the decentralized medium access control method of claims 1, 2 and 3 (DEV 102 transmitting a beacon message that contains the beacon period length, the beacon period length being based on the beacon messages received from other devices, see col. 5, lines 10-31, col. 6, lines 38-46, col. 7, lines 12-61).

Regarding **claim 60**, Salokannel discloses a wireless device that manages beaconing over a medium in a distributed manner (DEV 102, see fig. 1, col. 3, lines 41-45), comprising: an antenna (526, see fig. 1, col. 9, line 50) for sending and receiving beacons over the wireless medium (DEV 102 in a WPAN 100 transmitting a beacon message to devices in the network, see col. 6, lines 51-59, col. 7, lines 13-30); a receiver coupled to the antenna (524, see fig. 5, col. 9, line 50) to receive beacons transmitted over the wireless medium (DEV 102 in a WPAN 100 transmitting a beacon message to devices in the network, see col. 6, lines 51-59, col. 7, lines 13-30); a

transmitter coupled to the antenna (524, see fig. 5, col. 9, line 50) to transmit beacons over the wireless medium (DEV 102 in a WPAN 100 transmitting a beacon message to devices in the network, see col. 6, lines 51-59, col. 7, lines 13-30); a beacon processing module (510, see fig. 5, col. 9, line 48) to process sent and received beacons for distributed beaconing management over the medium (determining a beacon slot adjustment based received beacon messages and then generating and transmitting a beacon message based on the determination clearly indicates the presence of a processing module/processor to process received beacons and generated beacons, see fig. 3, col. 7, lines 24-61); a processor (510, see fig. 5, col. 9, line 48) to divide time into a sequence of at least one each said superframe (see figs. 2A, col. 3, lines 61-67) having at least one dynamic beacon period having a dynamic length with a pre-determined upper bound and that includes a plurality of beacon slots (superframe with variable number of beacon slots because the beacon period is dynamic, and wherein the maximum number of beacon slots is 24, indicating that a processor in the DEV 102 is capable performing the division of time into at least one superframe comprising at least one dynamic beacon period, see figs. 2A, 7 and 8, col. 3 line 66-col. 4, line 6, col. 7, lines 34-50), and coupled to: i. the transmitter and the receiver to send and receive, respectively, beacon frames during said at least one dynamic beacon period of the at least one superframe (transmission and reception of beacon messages occurs during the dynamic beaconing periods indicated by the beacon slots of figs. 7 and 8, see col. 4, lines 45-61, col. 12, lines 3-34), ii. the beacon processing module to-a. manage dynamic beacon period format and length including dynamic determination of dynamic beacon

period length (beacon slot adjustment, wherein the beacon slots for a beacon period can be increased or decreased based on the reception of a beacon message from a device in WPAN 100, see figs. 1 and 3, col. 7, lines 24-61), inclusion of a predetermined plurality of beacon slot types (table 2, indicating the code value and the number of slots used, see col. 7, lines 12-50), recordation of beacon slot occupancy (creating and transmitting in a beacon message and IE called a beacon period occupancy IE, BPOIE, the device receiving and saving the information in the BPOIE, see col. 5, lines 10-31, col. 6, lines 38-50) and implementation of beacon slot switches (switching between different beacon slot periods based on increasing or decreasing the beacon period, see figs. 7 and 8, col. 12, lines 3-34), a. format beacon frames for transmission comprising each of the beacon slot types such that the beacon frame announces a length of the beacon frame dynamically determined by the device (creating a beacon message comprising the BP length field information that includes the number of beacon slots used, see fig. 3, col. 7, lines 12-61), and b. format a beacon frame for transmission in the at least one beacon slot that includes beacon slot occupancy information and beacon slot switch information (transmitting a beacon message in a beacon slot 7041 that includes information for beacon period adjustments, the beacon message including BPOIE and BP length field for allowing a device to dynamically increase or decrease the beacon period, see figs. 7 and 8, col. 6, lines 38-46, col. 7, lines 34-61, col. 12, lines 13-20).

Allowable Subject Matter

6. Claims 4-51, 55, 59 and 61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUMIDE T. AJIBADE AKONAI whose telephone number is (571)272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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